

39TH CONGRESS OF THE EUROPEAN REGIONAL SCIENCE ASSOCIATION

Alexander Granberg, Council for location of productive forces, Russia, Moscow, e-mail: granberg@glas.apc.org; Irina Masakova, State Committee of the Russian Federation on Statistics, Russia, Moscow, fax: + 7 (095) 2072435, Ioulia Zaitseva, State Committee of the Russian Federation on Statistics, Russia, Moscow, fax: + 7 (095) 2072435

**DIFFERENTIATION OF REGIONS OF RUSSIA ON
GROSS REGIONAL PRODUCT BY EXPENDITURES**

The authors develop the paper “Gross regional product: indicator of differentiation of the region’s socioeconomic development (Russia in transition)”, represented on 38th the European congress of association of a regional science (RSA).

The statistical base of analysis is formed the data about final regional consumption (FRC) and fixed capital investment (FCI) by 79 subjects of Russian Federation in 1996. The maximal gap between 79 regions by FRC per capita in 1996 has made up 22,3 times (for Gross regional product (GRP) per capita - 20,4 times). The corrections of FRC in view of purchasing capacity of the population considerably eliminate interregional differences (maximal gap – 17,8 times).

The results of approximated evaluation of GRP by expenditure in regions are represented in the paper. The comparison of GRP by production and expenditure reveals the regions-donors (with debit balance of interregional exchange) and regions-recipients (with credit balance of interregional exchange). The obtained results allow to correct parameters of interbudget transfers in Russian Federation.

1. Final consumption in regions of Russia

Calculation of final consumption in regions of Russian Federation has been carried out by Goskomstat of Russia since 1995. This evaluations is the important step in program of regionalisation of SNA, purpose of which - creation of regional accounts in regions of Russian Federation completely compatible with SNA.

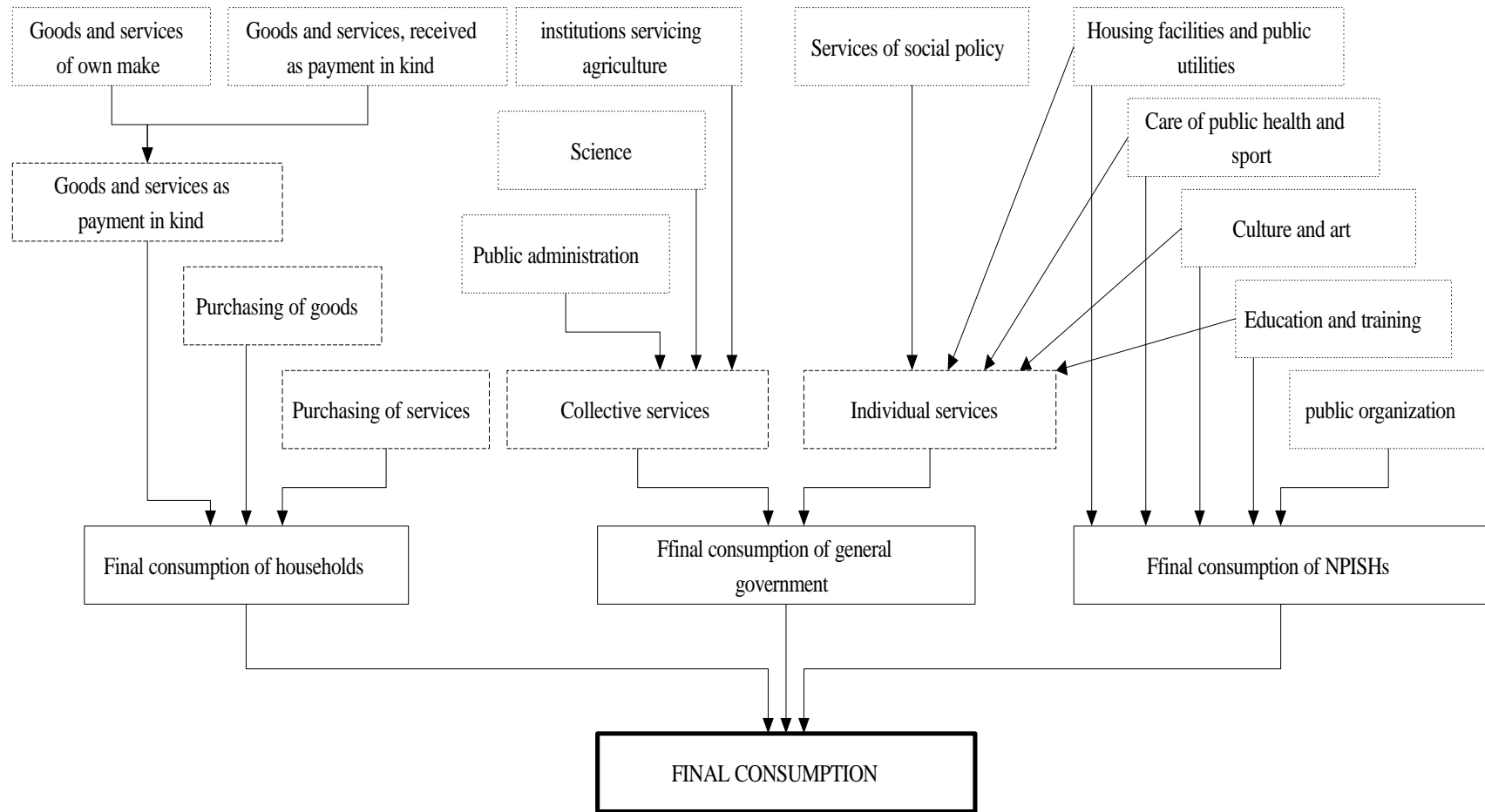


Chart 1. Evaluation of final consumption.

The methodology of FRC calculation has some simplifications, it's related with incomplete available data. The final consumption of households is taken into account in borders of region, without separation on residents and nonresidents of regional economy. The consumption of collective services is evaluated only by production method. The part of final consumption, connected with activity of federal institutes, is not distributed between regions (5,31% from total amount of final consumption in 1996).

1.1. Distribution of regions by final consumption

In 1996 the range of variation of FRC volumes has achieved 633,9 times (on the ends of line - Moscow and Ingush Republic), coefficient of variation has equal 188,9%. (The range of variation of GRP by production less in 3 times; coefficient of variation much less too). Distribution of FRC is extremely uneven (see tab. 1).

The top 10 regions are consumed 46,6 % of total FRC of Russia. In this tally are entered: 1). Moscow, 2) St.-Petersburg, 3) Tumen oblast, 4) Moscow oblast, 5) Sverdlovsk oblast, 6) Samara oblast, 7) Krasnodar kraj, 8) Cheljabinsk oblast, 9) Krasnojarsky kraj, 10) Kemerov oblast. To 8 regions, included in top ten group by GRP, were added Krasnodar kraj and Kemerov oblast, which have displaced Tatarstan and Bashkortostan. The second 10 regions add 17,8% of total FRC, third 10 regions - 10,8%. Share of 19 regions (24% from total quantity) with the least volumes of FRC (in their tally enters 14 ethnic-state formations) makes 4,8% of total FRC.

Table 1. Distribution of regions by FRC, %

Groups of regions distributed by FRC	Total amount of FRC (%)	For information: population (%)
First (1-10)	46,6	31,2
Second (11-20)	17,8	20,9
Third (21-30)	10,8	14,1
Fourth (31-40)	8,2	9,9
Fifth (41-50)	6,4	9,4
Sixth (51-60)	5,3	6,6
Seventh (61-79)	4,8	7,9
TOTAL	100	100

Half of total FRC of Russia is concentrated in the first 11 regions, 75% - in the first 29; 50 regions (with the lowest rate of FRC) consumed - 25%. The territorial distribution of FRC by quintile intervals is those: 20% of regions with the least FRC give 3,6%, second 20% - 8,3%, third 20% - 12,0%, fourth - 19,6% and 20% of regions with the greatest volumes FRC - 56,5%. Lorenz curve of

GRP and FRC are shown on figure 1. They almost merge. Gini coefficient of FRC is equal 49,38%, that is slightly lower, than Gini coefficient of GRP (51,67%).

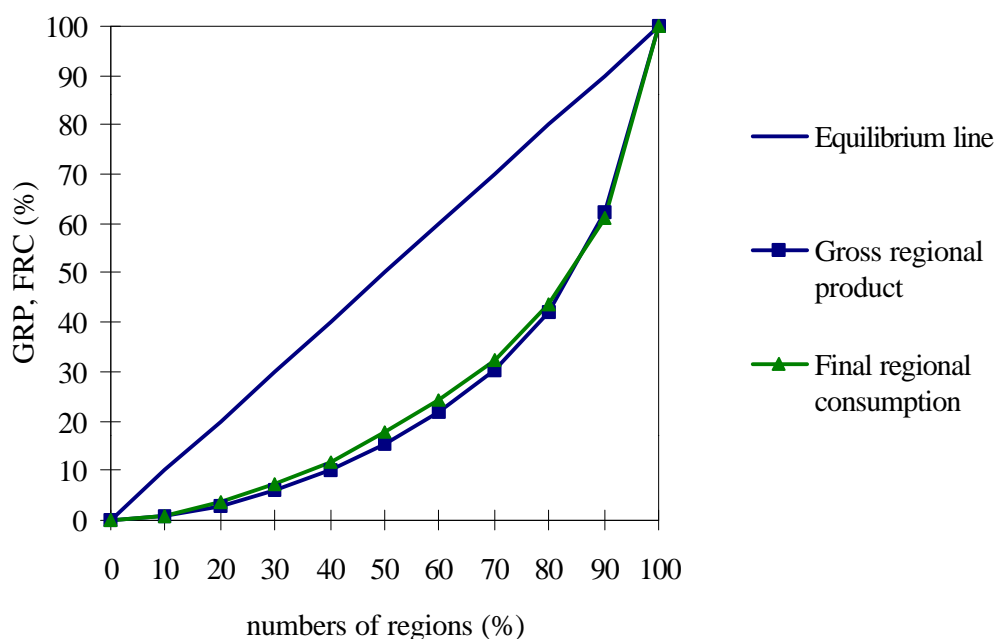


Figure 1. Lorenz curve of GRP and FRC.

1.2. The differentiation of regions by final consumption per capita

The FRC per capita range of variation for tally of 79 regions makes 22,29 times (Moscow and Ingush Republic), coefficient of variation - 44,9 %. Average volume of FRC per capita - 8620,6 denominated rub. or 1682,5 US dollars in 1996 by official average annual rate of exchange (5,12367 rub./US dollars). Average volume of FRC per capita by parity of purchasing power was equal 4124,7 US dollars in 1996.

All regions (79) are divided in 6 groups by GRP per capita as compared with average GRP, having equal intervals (25 percent points): 1) “regions-leaders” (more than 150% of average), 2) “developed” (125-150%), 3) “successful” (100-125%), 4) “less successful” (75-100%), 5) “poor” (50-75%), 6) “poorest” (less than 50%).

“Regions-leaders” group includes 5 regions:

1. Moscow city – 5973,2 US dollars, 355,0% of average,

2. Chukchi autonomous area – 3460,0 US dollars, 205,7% of average,
3. Magadan oblast – 3112,0 US dollars, 185,0% of average,
4. Republic Sakha (Yakutia) – 3073,2 US dollars, 182,7% of average.
5. Kamtchatka oblast – 2904,3 US dollars, 172,6% of average.

“Poorest” group includes 4 regions:

1. Republic of Altay – 840,8 US dollars, about 50% of average,
2. Republic of Kalmykija – 683,7 US dollars, 40,6% of average,
3. Republic of Dagestan – 399,3 US dollars, 23,7% of average,
4. Ingush Republic – 268,0 US dollars, 15,9% of average.

The huge differentiation of regions of Russian Federation by FRC per capita is represented on the diagram - “radar”.

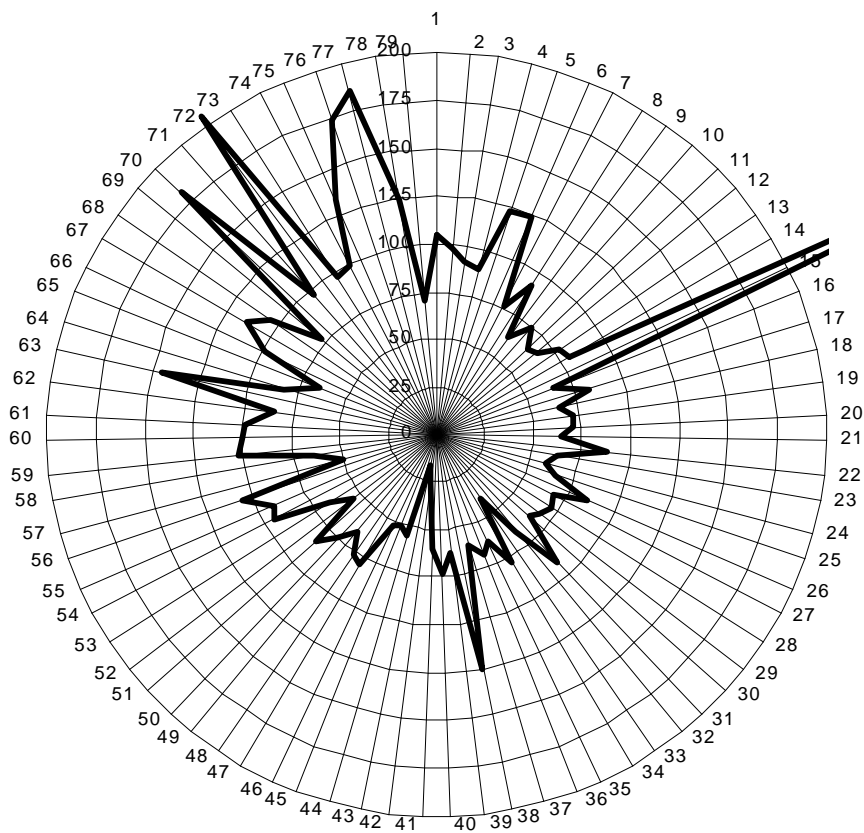


Figure 2. FRC per capita of regions of Russian Federation in relation to average, % (the regions of Russian Federation are numbered in the order accepted in the official publications of Goskomstat: since Northern economic region and finishing Far East economic region and Kaliningrad oblast).

Moscow and Chukchi autonomous area leaving the 200% circle, have on figure 2 number 15 and 72, Republic Dagestan and Ingush Republic which is taking place inside of 25% circle, have number 42 and 43.

On table 2 is visible, that the distribution of regions comparatively average FRC per capita is considerably uneven. Quality of regions having FRC per capita lower than average is 63 (they consume 54,8% of total FRC), and higher than average - only 16 (45,2% of total FRC).

Table 2. Distribution of FRC per capita by the groups of regions with regard to average FRC per capita

Groups of regions in relation to average FRC per capita	Number of regions in group	Share of group' FRC in total FRC, %	Average-group FRC per capita	
			US dollars	of average, %
1. more then 150% ("regions-leaders")	5	23,10	5478,4	325,61
2. 125-150% ("developed")	3	4,62	2354,9	139,96
3. 100-125% ("successful")	8	17,45	1912,2	113,65
4. 75-100% ("less successful")	26	28,02	1462,0	86,89
5. 50-75% ("poor")	33	26,29	1104,5	65,64
6. less then 50% ("poorest")	4	0,52	447,7	26,61
Total	79	100	1682,5	100

Disparity between regions by FRC per capita is so great, that the essential rapprochement of these values at the expense of internal sources of growth (increase of GRP and change of its structure) would require very long time (in interval from 10 to 30 years).

The process of rapprochement of regions on the given indicator can be accelerated by means of interregional redistribution of resources directed on final consumption. In particular, the bringing out of 4 poorest regions beyond 50% orbit will require to redistribute rather insignificant share of total FRC (less than 0,5%), because together these 4 regions concentrates only 0,52% of total FRC. Much more difficult task is removing group from 33 poor regions (focusing 26,3% of total FRC) beyond 75% orbit. The difficulty of the decision of this task by means of interregional redistribution is explained that tally of regions - potential donors - is so little (as it was already mentioned, only 16 regions have volume of FRC per capita above average, including only 8 - more than 125% of average).

1.3. Correcting of FRC in view of purchasing capacity of the population

The real standard of living of the population in region significantly depends from regional features of consumer prices and tariffs on goods and services, or from buying power of ruble in the

given region. Unfortunately, *living standard* is single statistical indicator of purchasing capacity of the population available for interregional comparisons, considered by Goskomstat (except autonomous areas) in regions of Russian Federation.

It is no doubt, that interregional differentiation by living standard is not identical of interregional differentiation by purchasing capacity of the population and still in lesser degree - differentiation of state institution costs (in particular on collective services). Therefore we use living standard for interregional comparisons of FRC per capita as the first rough approximation.

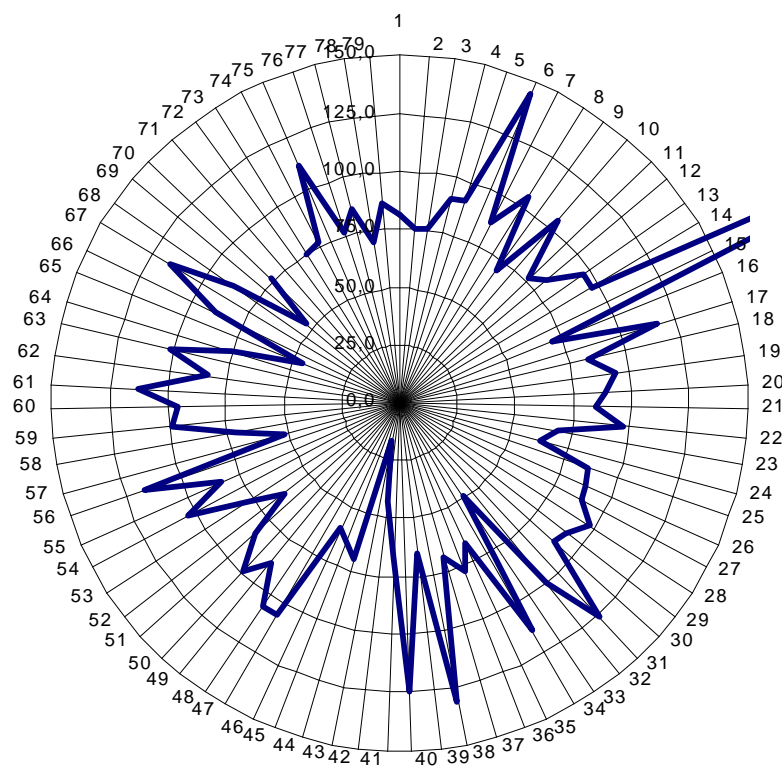


Figure 3. FRC per capita of the subjects of Russian Federation with correction on living standard with respect to average, %. On Jewish autonomous oblast (71) and Chukchi autonomous area (72) the data about living standard are absent.

Deserving the attention by result of correction of FRC is that the backlog of poorest regions is a little reduced. The exception is Chita oblast and Republic of Tyva, which backlog is even more increased, because they have high indexes of living standard (accordingly 1,466 and 1,430).

Table 3. Ten regions with least FRC per capita corrected on living standard coefficient
(% of average)

	With correction	Nominal
1. Ingush Republic	16,1	15,9
2. Republic of Dagestan	42,2	23,7
3. Republic of Tyva	45,3	64,8
4. Republic of Kalmykija	49,0	40,6
5. Republic of Altay	51,4	50,0
6. Chita oblast	52,5	77,0
7. Northern Ossetia	60,0	52,9
8. Mordovia	63,3	57,5
9. Kurgan oblast	63,4	53,4
10. Karachai-Cherkess Republic	64,3	50,5

Thus, the differentiation of regions by cost of life is one of the factors of regions rapprochement by final regional consumption and incomes of households. This placed stringent requirements upon the statistics of cost of life. The development of adequate indexes of the cost of life should become one of priority tasks for Goskomstat of Russian Federation.

2. Evaluation of GRP by expenditure. Comparison GRP by production and expenditure

Volume of GRP by expenditure is equal to the sum of FRC and gross capital formation. The regional statistics gives reliable data only by main part of gross capital formation - fixed capital investments (FCI) making 75,8% of volume of gross capital formation in Russia as a whole. The data on other elements of gross capital formation - "value of arrivals minus retirement of fixed capital" and "changes of inventories of material working capital". Therefore instead of GRP by expenditure for regions we calculate and analysis the sums of FRC and FCI.

Average ratio of sum of FRC and FCI to GRP by regions makes 82,5%. Higher ratio has 48 regions, smaller - 31 regions. The distribution of regions by this parameter looks as follows:

more than 100%	11 regions,
from 90% to 100%	21 regions,
from 82,5% to 90%	16 regions,
from 75% to 82,5%	10 regions,
from 65% to 75%	15 regions,
less than 65%	6 regions.

The greatest ratio of $(FRC+FCI)/GRP$ have Jewish autonomous area - 148,2%,. Moscow - 133,5%, Ingush Republic - 133,2%, Northern Ossetia - 132,0%, Republic of Tyva - 127,6%. The least ratio have Tumen oblast - 50,9%, Saratov oblast - 60,2%, Tatarstan - 60,4%.

The received classification with high probability allows to allocate the regions - donors (giving back part of GRP by production) and regions - recipients (receiving somehow part of GRP by expenditure though interregional redistributions).

Conditionally we shall accept, that the interval between 75% and 90% is a zone of indefiniteness for evaluating the donors and the recipients (in this interval essential role can be played by not taken into account elements of gross capital formation and errors). Then in tally of donors are included 21 regions, in tally of recipients - 32 regions, and in zone of indefiniteness - 26 regions.

"The phenomenon of Moscow" requires more careful analysis, because here major part of FRC makes final consumption of nonresident. From the other hand, it is necessary to specify the data on those regions (for example, Tumen oblast), whose population spends significant part of incomes in other regions.

The following stages of analysis should become: 1) estimation of nonresidents FRC of regional economy; 2) correction of data about investments in view of regional distinctions of value of investment objects, 3) inclusion in calculation of other elements of gross capital formation.

References

1. Granberg A., Masakova I., Zaitseva I. Gross regional product: indicator of differentiation of the region's socioeconomic development (Russia in transition). 38th Congress of the European Regional Science Association (RSA).
2. National Accounts in Russia in 1989-1996. Statistical data. Goskomstat of Russia, 1998.